

Angasomyrtus, a new genus of Myrtaceae (Leptosperminae) from Western Australia

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Abstract

Trudgen, M. E. and Keighery, G. J. *Angasomyrtus*, a new genus of Myrtaceae (Leptosperminae) from Western Australia. *Nuytsia* 4(3): 435-439 (1983). *Angasomyrtus* gen. nov. and *A. salina* sp. nov. are described and illustrated. The taxonomic position and distinguishing features of the new genus are discussed; its closest relatives are considered to be *Kunzea* and *Leptospermum*. Only three populations are known, two about 50 km north of Esperance, and a third 90 km north-east of Esperance. On present knowledge the taxon must be considered rare.

Angasomyrtus Trudgen and Keighery, gen. nov.

Frutex; partes juniores floresque sparsim puberulii. *Folia* opposita, parva, in extremis ramulis aggregata. *Flores* parvi, bibracteolati, sessiles. *Hypanthium* anguste turbinatum. *Calycis* lobi 5. *Petala* effusa. *Ovarium* hypanthio adnatum, 2 vel 3(4) loculatum. Placentatio axialis. *Stamina* non exserta, in verticillis duobus disposita; antherae dorsifixae, rimis parallelis dehiscentes. *Stylus* crassus inclusus. *Fructus* capsula ad hypanthium chartaceum adnata. *Semen* cylindricum; hilum parvum, terminale, testa membranacea, brunnea. *Embryo* rectus, cotyledonibus radiculam aequantibus; endospermium absens.

Typus: *Angasomyrtus salina* Trudgen and Keighery

Shrub, young growth and flowers minutely puberulent. *Leaves* opposite, small, clustered at ends of branchlets. *Flowers* small, bibracteolate, sessile, solitary in the axils of leaf-like bracts. *Hypanthium* narrowly turbinate, chartaceous. *Calyx lobes* 5. *Petals* 5, spreading. *Ovary* adnate to the hypanthium, not protruding, 2-3(4) locular. *Placentation* axile. *Stamens* 16-19, in 2 whorls, not exerted beyond petals; anthers dorsifixed, dehiscing in parallel slits. *Style* thick, not exerted beyond petals. *Fruit* a capsule, narrowly turbinate, adnate to the chartaceous hypanthium. *Seeds* cylindrical, pendulous; hilum small, terminal, testa papery, brown. *Embryo* straight, the cotyledons equal to the radical, endosperm absent.

Generic etymology. The genus is named after the co-discoverer, Mr Angas Hopkins, who is known for his work on the ecology and conservation of the Western Australian flora.

Angasomyrtus salina Trudgen and Keighery, sp. nov. (Figure 1)

Frutex apertus effusus; rami juniores subtiliter et sparsim puberuli. *Folia* erecta, fasciculata, ad extremos ramulos tantum evoluta, anguste elliptica ad lanceolata, 4-6 mm longa, semiteretia. *Flores* bibracteolati. *Hypanthium* c. 2 mm longum. *Calycis* lobi erecti longitudine quartam partem hypanthii aequantes. *Petala* calyce 2 plo

longiora. *Ovula* 4-5 in quoque loculo. *Stamina* in verticillis duobus, exteriora erecta, interiora horizontalia, filamentis abbreviatis. *Stylus* crassus, apicem versus gradatim contractus. *Capsula* vix aucta; stylus et calycis lobi persistentes. *Semina* pendula, testa membranacea, brunnea.

Typus: South of Truslove on reserve No. 27983 (8.6 km from northern boundary along central track), 33°23'S, 121°45'E, Western Australia, 8 Feb. 1977, A. Hopkins 77/27 and M. E. Trudgen (holo: PERTH; iso: K, CANB, NSW).

An open spreading *shrub* to 40 cm tall and 2 m across, finely and sparsely puberulent on the young branchlets, very young leaves and flowers. *Shoots* subtended by minute scarious cordate bracts. *Leaves* erect, clustered at the ends of the branchlets, narrow-obovate to elliptic, 4-6 mm long, concave above, smooth, yellow-green, gland-dotted; *petiole* 0.5 mm long. *Flowers* small, 4-6 mm across petals, solitary in the axils of leaf-like bracts, bibracteolate. *Bracteoles* scarious, ovate, clasping the hypanthium, caducous. *Hypanthium* about 2 mm long, narrowly turbinate. *Calyx lobes* 5, erect, narrow-cordate to semi-circular, $\pm 1/4$ length of hypanthium. *Petals* spreading, suborbicular, about twice length of calyx lobes, very pale pink or white. *Ovary* adnate to hypanthium, 2 or 3(4) locular. *Placentation* axile from top inside corners of the loculi; *placentas* peltate; ovules 4-5 per loculus. *Stamens* 16-19 in two whorls; filaments terete, tapering from the base; inner whorl 0.2-0.4 mm long; outer whorl 0.4-0.6 mm long. *Anthers* dorsifixed, 0.2-0.25 mm long, 0.25-0.3 mm broad, loculi parallel, opening in parallel slits that converge towards the base; connective gland obovoid, pale. *Style* stout, shortly immersed, tapering slightly. *Stigma* a papillose surface on the truncated style apex. *Fruit* a capsule enclosed in a chartaceous hypanthium, apex expanding causing the style to become further immersed; stalks of placentas elongated across the tops of the loculi so that the seeds are pendulous in the fruit. *Seeds* more or less cylindrical, slightly broader at the chalazal end, 1-1.2 x 0.3-0.5 mm. *Testa* membranous to papery, dark brown with fine longitudinal ribs, oil glands absent. *Chromosome number*, $2n=22$ (voucher: Reserve No. 27983, G. J. Keighery and M. E. Trudgen, PERTH).

Other collections examined. 10 km west of Wittenoom Hills, 15 Jan. 1978, G. J. Keighery and M. E. Trudgen s.n. (PERTH); Type locality, 15 Jan. 1978, G. J. Keighery and M. E. Trudgen s.n. (PERTH); Type locality, Jan. 1979, C. Robinson s.n. (PERTH); 6 km north east of Mt Heywood, K. Newbey 7918 (PERTH).

Distribution and habitat. *Angasomyrtus salina* grows in white sand dunes over clay at the margins of small playa lakes. At the type locality a sand dune rises gently from the lake floor and near the bottom of the dune *A. salina* occurs between a community of an unusual variant of *Tegicornia uniflora* P. G. Wilson and a *Melaleuca/Eucalyptus* shrubland. At the Wittenoom Hills locality the dune is truncated along the border of the *A. salina* belt and the *Eucalyptus/Melaleuca* community. Here *A. salina* occurs as scattered individuals at the edge of the shrubland which abuts directly onto the lake. Although playa lakes are common in the region north of Esperance, not many have marginal sand dunes, a habitat to which *A. salina* is restricted.

Flowering period. *Angasomyrtus salina* flowers from December to February. The exact time seems to be quite variable, for example, the type was collected in late flower in Feb. 1977 but when the same locality was revisited in Jan. 1978 all plants in the population had finished flowering. Subsequent visits have failed to secure good flowering material.

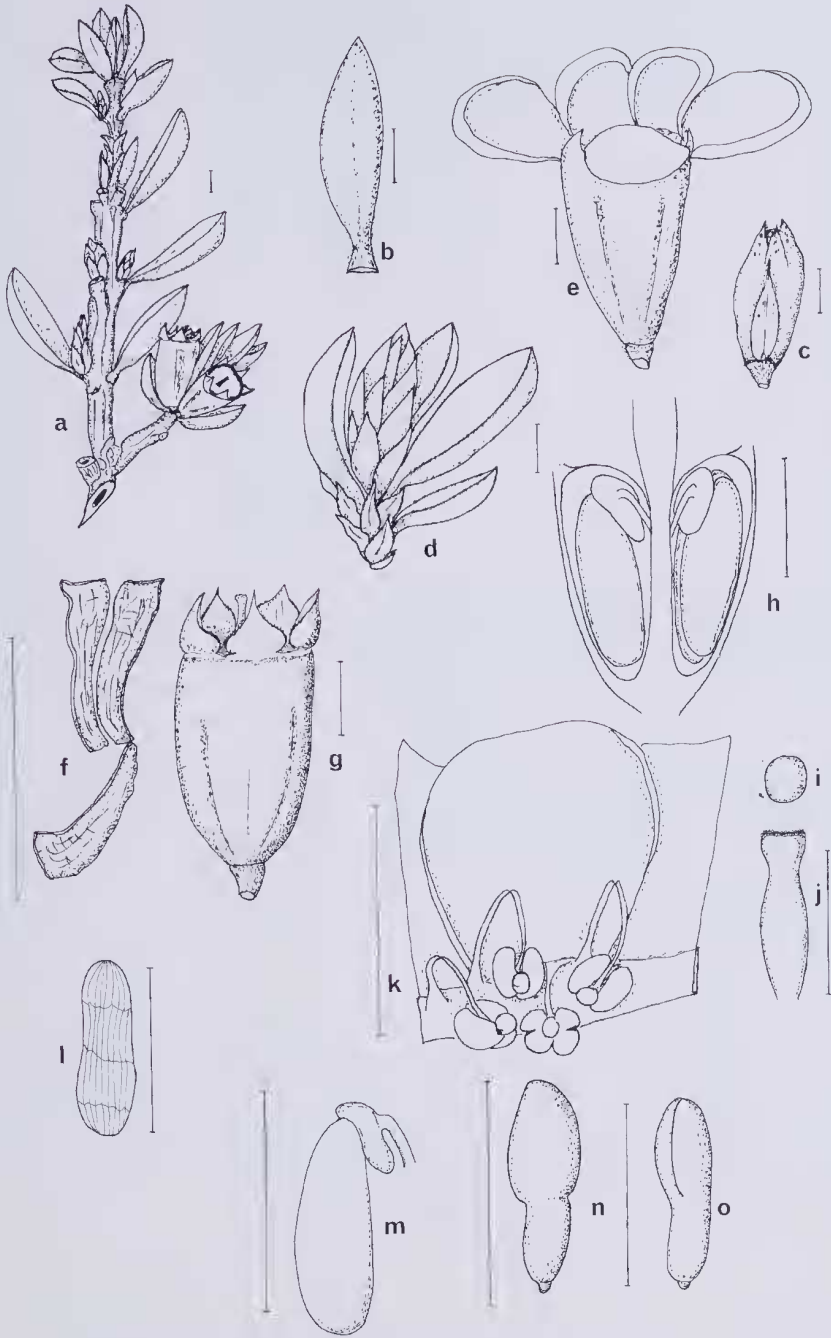


Figure 1. *Angasomyrtus salina*. a—Portion of branch; b—Adaxial view of leaf; c—Bracteoles on bud; d—Dormant terminal bud; e—Flower; f—Ovulodes; g—Fruit; h—Detail of placental stalk; i—Style TS; j—Style; k—Stamens; l—Seed showing ornamentation; m—Seed showing attachment to placenta (immature); n/o—Ovule. All drawn from A. Hopkins 77/27 and M. E. Trudgen (the type). Scale bar = 1 mm.

Conservation status. On present knowledge *Angasomyrtus salina* must be considered a rare species of restricted habitat and restricted range. As such, its continued existence may depend upon the Truslove Reserve population remaining undisturbed. Further clearing for agriculture could easily destroy the species at the other two known localities.

Specific etymology. The specific epithet refers to the saline habitat of the new species.

Relationships and delineations of Angasomyrtus. Within the Myrtaceae *Angasomyrtus* belongs to the tribe Leptospermeae (Bentham 1867) because its fruit is a capsule. Its position in this tribe appears to be in the subtribe *Leptosperminae* (syn. Bentham's (1867) "*Euleptospermeae*") or the *Leptospermum* alliance of Briggs and Johnson (1979) because of its straight embryo with the cotyledons equal in length to the radicle and the presence of scarious bracts subtending the dormant shoot apices. This is felt to be the most appropriate position even though the leaves of *Angasomyrtus* are consistently opposite, a rare character state for the *Leptosperminae*.

The closest relatives of *Angasomyrtus* within the *Leptosperminae* appear to be *Kunzea* and *Leptospermum* (see below). The new genus can be easily separated from *Agonis*, *Callistemon*, *Conothamnus*, *Melaleuca* and *Sinoga* because all of these genera have their flowers grouped in heads and have woody fruit. It can also be easily separated from *Lamarchea* which has a woody fruit and has its stamens fused in a tube.

The chartaceous fruits of *Angasomyrtus* appear to closely relate this genus to *Kunzea*. This relationship is further supported by the fact that some *Kunzea* species occasionally have opposite leaves on some shoots, solitary flowers and two whorls of stamens. *Angasomyrtus* differs from *Kunzea* in having consistently opposite leaves, non-exserted stamens, flowers in monads not united into heads, a narrowly turbinate (not ovoid or globular) hypanthium, and blastotelic and auxotelic inflorescences (*Kunzea*: blastotelic and anauxotelic).

While *Angasomyrtus* has a superficial floral resemblance to *Leptospermum* (flowers in monads, stamens not exserted, conflorescences blastotelic and auxotelic) it differs in its fruits. The fruit in *Leptospermum* is campanulate, generally more woody and five or more celled. It is noted, however, that in *Leptospermum* sect. *Pericalymma* the fruit is 3- (not 5-) celled and is narrower than in either sect. *Leptospermum* or sect. *Fabrica*. In these characters sect. *Pericalymma* superficially resembles *Angasomyrtus* (fruits 3-celled and narrowly turbinate). However, sect. *Pericalymma* has a very distinctive vegetative morphology and according to Briggs and Johnson (1979) probably deserves generic status.

Angasomyrtus can be further distinguished from *Kunzea* and *Leptospermum* by the nature of the placenta whose stalk elongates during development of the fruit. At the flowering stage the axile placenta is almost sessile, however by the time the seeds are fully developed the stalk of the placenta has elongated and the placenta has moved to the top of the loculus where it faces downwards (see Figure 1h). The position taken up by the placenta is presumably to accommodate the pendulous seeds (to 1.2 mm long) in the narrowly turbinate fruit.

References

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